

1 **CLAIMS**

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3 1. An application program interface embodied on one or more computer

4 readable media, comprising:

- 5 a first namespace related to data shared by a plurality of data providers;
- 6 a second namespace related to data used in an object-oriented database;
- 7 a third namespace related to data used by an SQL client; and
- 8 a fourth namespace related to native data types within an SQL server.
- 9

10 2. An application program interface as recited in claim 1, wherein the

11 SQL server is a Microsoft SQL Server.

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13 3. An application program interface as recited in claim 1, wherein the

14 first namespace includes a data adapter class to exchange data between a data

15 source and a data set.

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17 4. An application program interface as recited in claim 1, wherein the

18 first namespace includes a data column mapping class to map column names from

19 a data source to column names in a data table.

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21 5. An application program interface as recited in claim 1, wherein the

22 first namespace includes a data table mapping class to map data returned from a

23 query of a data source and a data table.

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1 6. An application program interface as recited in claim 1, wherein the
2 first namespace includes a row update class to indicate when an update to a row is
3 started.

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5 7. An application program interface as recited in claim 1, wherein the
6 first namespace includes a row update class to indicate when an update to a row is
7 completed.

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9 8. An application program interface as recited in claim 1, wherein the
10 second namespace includes a command builder class to automatically generate
11 SQL statements for data table updates.

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13 9. An application program interface as recited in claim 1, wherein the
14 second namespace includes a connection class to enable a connection to a data
15 source.

16
17 10. An application program interface as recited in claim 1, wherein the
18 third namespace includes a command builder class to automatically generate SQL
19 statements for data table updates.

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21 11. An application program interface as recited in claim 1, wherein the
22 third namespace includes a connection class to represent a unique session to an
23 SQL server data source.

1 12. An application program interface as recited in claim 1, wherein the
2 third namespace includes a data adapter class to exchange data between a data set
3 and an SQL server for retrieving and saving data.
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5 13. A network software architecture comprising the application program
6 interface as recited in claim 1.
7

8 14. An application program interface embodied on one or more
9 computer readable media, comprising:

10 a first group of services related to sharing data among a plurality of data
11 providers;

12 a second group of services related to using data in an object-oriented
13 database;

14 a third group of services related to data used by a database client; and

15 a fourth group of services related to data types used by a database server.
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17 15. An application program interface as recited in claim 14, further
18 comprising a constraint class to maintain the integrity of data in a data table.
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20 16. An application program interface as recited in claim 14, further
21 comprising a data column class to create a data table.
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1 17. An application program interface as recited in claim 14, further
2 comprising a data column collection class to identify the type of data each data
3 column in a data table can contain.

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5 18. An application program interface as recited in claim 14, further
6 comprising a data relation class to relate two data table objects to each other.

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8 19. An application program interface as recited in claim 14, further
9 comprising a data row collection class to identify data stored in a data table.

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11 20. An application program interface as recited in claim 14, further
12 comprising a property collection class to add custom properties to a data table.

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14 21. A network software architecture comprising the application program
15 interface as recited in claim 14.

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17 22. A method comprising:
18 creating a common namespace related to data shared by a plurality of data
19 providers;
20 creating an object-oriented namespace related to data used in object-
21 oriented databases;
22 creating an SQL client namespace related to data used by SQL clients; and
23 creating an SQL types namespace related to native data types in an SQL
24 server.
25

1 **23.** A method as recited in claim 22, wherein the common namespace
2 includes:

3 a data adapter class to exchange data between a data source and a data set;

4 a data column mapping class to map column names from a data source to
5 column names in a data table;

6 a data table mapping class to map data returned from a query of a data
7 source and a data table; and

8 a row update class to indicate when an update to a row in a data table is
9 completed.

10
11 **24.** A method as recited in claim 22, wherein the object-oriented
12 namespace includes:

13 a command builder class to generate SQL statements for data table updates;
14 and

15 a connection class to enable a connection to a data source.

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17 **25.** A method as recited in claim 22, wherein the SQL client namespace
18 includes:

19 a command builder class to generate SQL statements for data table updates;

20 a connection class to represent a unique session to an SQL server data
21 source; and

22 a data adapter class to exchange data between a data set and an SQL server
23 for retrieving and saving data.

1 26. A computer system including one or more microprocessors and one
2 or more software programs, the one or more software programs utilizing an
3 application program interface to request services from an operating system, the
4 application program interface including separate commands to request services
5 consisting of the following groups of services:

6 a first group of services related to sharing data among a plurality of data
7 providers;

8 a second group of services related to utilizing data stored in an object-
9 oriented database;

10 a third group of services related to data used by a database client; and

11 a fourth group of services related to data types used by a database server.

12
13 27. A method comprising:

14 managing network and computing resources for a distributed computing
15 system; and

16 exposing a set of functions that enable developers to access the network and
17 computing resources of the distributed computing system, the set of functions
18 comprising first functions to facilitate data sharing, second functions to facilitate
19 accessing object-oriented databases, third functions to facilitate SQL client
20 operations, and fourth functions to facilitate SQL server operations.

1 **28.** A method comprising:
2 calling one or more first functions to facilitate sharing of data among
3 multiple data providers;
4 calling one or more second functions to facilitate accessing object-oriented
5 databases;
6 calling one or more third functions to facilitate SQL client operations; and
7 calling one or more fourth functions to facilitate SQL server operations.

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9 **29.** A method as recited in claim 28, wherein the first functions
10 comprise functions for exchanging data between a data source and a data set,
11 mapping column names from a data source to column names in a data table, and
12 indicating when an update to a row is completed.

13
14 **30.** A method as recited in claim 28, wherein the second functions
15 comprise functions for generating SQL statements for data table updates and
16 enabling a connection to a data source.

17
18 **31.** A method as recited in claim 28, wherein the third features comprise
19 functions for generating SQL statements for data table updates and representing a
20 unique session to an SQL server data source.